

Application Serial no. 09/606,575

**REMARKS**

1. Applicant thanks the Examiner for the Examiner's findings and conclusions.

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2. It should be appreciated that Applicant has elected to amend Claims 1, 31-39, 42, and 45 solely for the purpose of expediting the patent process in a manner consistent with the PTO's Patent Business Goals, 65 Fed. Reg. 54603 (9/8/00). In making such amendments, Applicant has not and does not in any way narrow the scope of protection to which the Applicant considers the invention herein entitled. Rather, Applicant reserves Applicant's right to pursue such protection at a later point in time and merely seeks to pursue protection for the subject matter presented in this submission.

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**Hilton Davis / Festo Statement**

- 15 The amendments herein to Claim 1, 31-39, 42, and 45 were not made for any reason related to patentability. Claims 1, 31-39, 42, and 45 were amended to clarify the invention and/or to conform with standard claim drafting practices. All of the above listed amendments were made for reasons other than patentability.

- 20 3. Claims 1, 31-39, 42, and 45 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

**Claim 1**

- 25 The Examiner states that "nowhere in Applicant's specification [is the amended claim] limitation ... recited or disclosed". With traverse, the Applicant amends the last wherein paragraph of Claim 1 to exactly replicate Claim 1 prior to the amendment of April 4, 2007. Accordingly, the current rejection of Claim 1 and all claims dependent therefrom

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under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter, which the Applicant regards as the invention is deemed to be overcome.

5 Claims 31-39, 42, and 45

The Examiner states that "nowhere in Applicant's specification [is the amended claim] limitation ... recited or disclosed". The Applicant amends:

- Claim 31 to remove the wherein clause; and
- Claims 32-39, 42, and 45 to remove the final wherein clause

10 all of which were inserted by way of the amendment of April 4, 2007. Accordingly, the current rejection of Claims 31-39, 42, and 45 and all claims dependent therefrom under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter, which the Applicant regards as the invention is deemed to be overcome.

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4. Claims 1, 31-39, 42, and 45 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter, which the Applicant regards as the invention.

20 Claims 1, 31-39, 42, and 45

In view of the above described amendments to Claims 1, 31-39, 42, and 45 responsive to the 35 U.S.C. § 112, first paragraph, rejection for failing to comply with the written description requirement, the current rejection of Claims 1, 31-39, 42, and 45 and all claims dependent therefrom under 35 U.S.C. § 112, second paragraph, as being  
25 indefinite for failing to particularly point out and distinctly claim the subject matter, which the Applicant regards as the invention is rendered moot.

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5. Claims 1 and 3-46 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. patent no. 5,577,169 (hereinafter "Prezioso") in view of U.S. patent no. 5,819,226 (hereinafter "Gopinathan").

5 Claim 1

As to Claim 1, the Applicant respectfully disagrees as the **pair variable** requirement of Claim 1 is not taught in the cited art. Claim 1 requires target and second and different entity pair variables. The **pair variable** represents **interactions** of two entities. In this case, the **pair variable** represents **interactions** between the target and the second and different entity. As illustrated in Figure 4, a provider T interacts with a client A to form an interacting entity pair T/A. In Claim 1, the provider T is the target entity and the second and different entity is the client A.

The interaction of the target entity T and the client A in terms of the required language of Claim 1 is provided herein. Claim 1 requires that:

- in the first pass, a target profile is created for T;
- in the second pass, a second and different entity profile is created for A; and
- in the third pass, the target T and the second and different entity A are combined into an entity pair variable T/A.

Hence, the entity pair variable is a variable describing the interactions of the target entity T to the second and different entity A.

In stark contrast, Gopinathan merely merges data, but does not create pair variables representing interactions between entities. Stated slightly difference and further described below, Gopinathan merely merges data, but does not create an entity pair variable. This argument is expanded in terms of the Examiner cited section of Gopinathan at Figure 11 described in column 6, line 5 to column 7, line 5. Specifically,

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at column 6, line 41 Gopinathan describes merging data using mxmerge.sas 1108. Merging data is a known preprocessing step and Figure 11 merely describes preprocessing as stated in the first sentence of the cited section at column 6, lines 5-6. Further, the data preprocessing step is merely mechanically merging data into a single matrix in preparation for neural network training. The neural network basis of Gopinathan is apparent in the abstract and in Figures 7, 8, and 10. The preprocessing of Figure 11 is directly tied to the network training in the cited section at column 6, lines 25-26. Those skilled in the art know that the single matrix is required for input for neural network training and would immediately recognize that Gopinathan is merely combining vectors of data into a matrix in preparation for input into the neural network for training. While, target profiles for two entities may be taught in Gopinathan, no suggestion is made that the two entities interact. Specifically, Gopinathan teaches, at column 6, lines 10-15 separate data represented by three separate databases: (1) a past transaction database 1102; (2) a fraud database 1102; and (3) a customer database 1103. These are interpreted by the Examiner as representing the target entity T and the second and different entity A. However, there exists no teaching or suggestion within Gopinathan of interaction between the target entity T and the second and different entity A. Examples in the specification as filed of an interaction are a patient interacting with a doctor or a merchant interacting with a customer. Here the doctor and merchant is the target entity T and the patient or customer is the second and different entity A, respectively. In Gopinathan, no entity pair variable is possible as the target entity T and the second and different entity A do not interact. Claim 1 requires "computing target and second and different entity pair variables". Pair variables are not taught within Gopinathan and the combined art of Gopinathan and Prezioso fail to teach or suggest the described claim requirement. Accordingly, the current rejection of Claim 1 and all claims dependent therefrom under 35 U.S.C. § 103(a) as being unpatentable over Prezioso in view of Gopinathan is deemed to be improper.

The Applicant amends Claim 1 to further distinguish Claim 1 from the cited art and to clarify the invention. First, the Applicant removes the sorting requirement from the section on the second pass. Second, the Applicant clarifies that the computing step

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computes an entity pair variable describing interaction of said target and said second and different entity. Third, the Applicant clarifies that the creating step uses the target profiles and the second and different entity profiles in the creation of the entity pair profile. Support for the amendments is found in the application as filed at least within  
5 original Claim 1 and Figures 2-4. Further support is found in the application as filed at page 24, lines 10-14 reading, emphasis added:

The approach is based on profiling not only the target entity itself, but also other entities that interact with the target entity via transactions. This includes profiling the interacting pairs of entities themselves as entities.

10 Still further support is found in the application as filed at page 24, lines 10-14 reading, emphasis added:

Using the above cascading process as a building block, the profile of a target entity can be expanded to account for its interactions with other entities as well. For instance, consider that the target entity T interacts with two kinds of entities, A and B. Then for  
15 each of A and B, the interactions with T are profiled as described above. These are then merged, along with the direct roll-ups for entity T.

Yet still further support is found in the application as filed at page 24, lines 17-21 reading:

20 Fig. 2 illustrates how the interactions of T with another entity A can be profiled, as was described above for the provider-client entities. Fig. 4 expands the profile 414 of T to another level by incorporating via an enhance process the interaction of T with both A and B, from the T/A and T/B profiles 410, 412 of interacting entity pairs, T/A and T/B.

The combination of Gopinathan and Prezioso does not teach or describe the amended Claim 1 limitations of: (1) computing an entity pair variable describing interaction of the  
25 target and the second and different entity or (2) creating a target and second and different entity pair profile using said target profiles and said second and different entity profiles. Accordingly, the current rejection of Claim 1 and all claims dependent therefrom under 35 U.S.C. § 103(a) as being unpatentable over Prezioso in view of Gopinathan is deemed to be overcome.

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Claim 31-39

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As to Claim 31-39, 42, and 45, the Applicant respectfully disagrees for reasons similar to that detailed, *supra*, in the section responsive to Claim 1. Particularly:

- Claim 31 contains a limitation to "interacting pairs of entities";
- Claim 32 contains a limitation of "1st and 2nd entities are an interacting pair of entities";
- Claim 33 and 34 contain limitations of "1st and 2nd interacting pair of entities";
- Claims 35 and 36 contain limitations of a "2nd entity that interacts with the 1st entity through transactions with the 1st entity";
- Claim 37 contains a limitation of "said 1st entity interacting with at least a 2nd entity";
- Claim 38 contains a limitation of "interacting pairs of entities";
- Claim 39 contains a limitation of "interacting first and second entities";
- Claim 42 contains a limitation of "an interacting pair of entities"; and
- Claim 45 contains a limitation of an "interacting first and fourth entity".

As argued, *supra*, with respect to Claim 1, the combination of Gopinathan and Prezioso does not teach or describe interacting pairs of entities or profiles generated based upon the interactions. Accordingly, the current rejection of Claims 31-39, 42, and 45 under 35 U.S.C. § 103(a) as being unpatentable over Prezioso in view of Gopinathan is deemed to be improper.

#### Claims 31-34

In order to further distinguish Claims 31-34 from the cited art and to clarify the invention, in a manner similar to that of Claim 1 the Applicant amends Claims 31-34. Details of the amendments are provided, *infra*.

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For Claim 31, first the Applicant clarifies that an individual profile and a multiple entity profile is produced, thereby removing ambiguity of the claim language. Second, the Applicant clarifies that the enhance process computes an entity pair profile describing interaction of the direct profile and said individual entity profile.

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For Claim 32, the Applicant amends Claim 32 to further require that the 3<sup>rd</sup> profile describes interaction of members of the 1<sup>st</sup> entity with members of said 2<sup>nd</sup> entity.

For Claim 33, the Applicant amends Claim 33 to clarify that an enhanced 1<sup>st</sup> entity profile is generated and that the enhanced 1<sup>st</sup> entity profile describes interactions between the 2<sup>nd</sup> and 3<sup>rd</sup> entities.

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For Claim 34, the Applicant amends Claim 33 to clarify that the 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> entities comprise interacting entities, where both the 1<sup>st</sup> profile and said 2<sup>nd</sup> profile describe interactions between said 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> entities.

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Support for the amendments is found in the same sections listed above supporting amendments to Claim 1. The combination of Gopinathan and Prezioso does not teach or describe the amended claim limitation of the enhance process computing an entity pair profile describing interaction of the direct profile and said individual entity profile. Accordingly, the current rejection of Claims 31-34 and all claims dependent therefrom under 35 U.S.C. § 103(a) as being unpatentable over Prezioso in view of Gopinathan is deemed to be overcome.

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#### 25 Claim 37

The Applicant amends Claim 37 to clarify that the 1<sup>st</sup> entity comprises a client and 2<sup>nd</sup> entity comprises a provider. The combination of Gopinathan and Prezioso does not teach or describe the amended claim limitation of the 1<sup>st</sup> and 2<sup>nd</sup> entities representing a

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client and provider, respectively. Support for the amendment is found in the application as filed at least at elements 400 and 404 of Figure 4 and at page 3, lines 7-8. The combination of Gopinathan and Prezioso does not teach or describe the amended claim limitation. Accordingly, the current rejection of Claim 37 under 35 U.S.C. § 103(a) as being unpatentable over Prezioso in view of Gopinathan is deemed to be overcome.

#### Claim 38

The Applicant amends Claim 38 to clarify that the entity having members comprises a patient and that the multiple entity comprises a doctor. The combination of Gopinathan and Prezioso does not teach or describe the amended claim limitation of the two entities having a doctor / patient relationship. Support for the amendment is found in the application as filed at least within Table 1. The combination of Gopinathan and Prezioso does not teach or describe the amended claim limitation. Accordingly, the current rejection of Claim 38 and all claims dependent therefrom under 35 U.S.C. § 103(a) as being unpatentable over Prezioso in view of Gopinathan is deemed to be overcome.

#### Claim 42

The Applicant amends Claim 42 to clarify that the target entity comprises an account holder and that the second entity A comprises a merchant. The combination of Gopinathan and Prezioso does not teach or describe the amended claim limitation of the two entities having an account holder / merchant relationship. Support for the amendment is found in the application as filed at least within Table 1. The combination of Gopinathan and Prezioso does not teach or describe the amended claim limitation. Accordingly, the current rejection of Claim 42 and all claims dependent therefrom under 35 U.S.C. § 103(a) as being unpatentable over Prezioso in view of Gopinathan is deemed to be overcome.

#### Claim 45



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As to Claim 45, the Applicant respectfully disagrees. Claim 45 requires a fourth and fifth entity. At best, Gopinathan describes three databases, interpreted by the Examiner as entities, including: (1) a past transaction database 1102; (2) a fraud database 1102; and (3) a customer database 1103. The combination of Gopinathan and Prezioso does not teach or describe a fourth and fifth entity or an interacting entity. Accordingly, the current rejection of Claim 45 and all claims dependent therefrom under 35 U.S.C. § 103(a) as being unpatentable over Prezioso in view of Gopinathan is deemed to be improper.

10 **CONCLUSION**

In view of the above, the Application is deemed to be in allowable condition. The Examiner is therefore earnestly requested to withdraw all outstanding rejections, allowing the Application to pass to issue as a United States Patent. Should the Examiner have any questions regarding the application, the Examiner is respectfully urged to contact Applicant's attorney at (650) 474-8400.

Respectfully submitted,

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